

# Pleiades Front-End (PFE) Usage Guidelines

The PFEs are the front-end systems for Pleiades, Aitken, Electra, and Endeavour. They provide an environment that enables quick turnaround for tasks such as file editing, file transferring, compiling, and short debugging/testing sessions, as well as for batch job submissions via PBS to a subset of the Pleiades compute nodes, or to Aitken, Electra, to Endeavour.

**WARNING:** The PFEs use Intel Sandy Bridge processors. If you use a PGI compiler to build your executable on the PFEs, be aware that by default the executable is optimized for the Sandy Bridge microarchitecture (which includes Sandy Bridge and Ivy Bridge) and will not necessarily execute on the compute node processors. See [PGI Compilers and Tools](#) for information on generating a single executable that will work on all processor types. You cannot use SSH to access the compute nodes except for the subset of nodes your PBS job is running on.

## Pre-Processing and Post-Processing Data

For pre- and post-processing applications such as [Tecplot](#), [IDL](#), and [MATLAB](#), we recommend using the [Lou data analysis nodes](#) (LDANs). You can request the LDANs in the `qsub` command line. The Lou home filesystems, Pleiades home filesystems, and `/nobackup` filesystems are all mounted on the LDANs.

## Restrictions on Front-End Systems

MPI (Message Passing Interface) jobs are *not* permitted to run on the PFEs. In addition, you will be notified by email if a job running on a PFE exceeds 27 GB.

Before starting a large-memory session, it is a good idea to make sure there is enough memory available. You can run the `top` command, hit "M", and check under the "RES" column for other large memory applications that may be running.

## File Transfers to Mass Storage

The `/nobackup` filesystems are mounted on Lou, so the easiest way to transfer files between Pleiades and Lou is to initiate a command such as `shiftpc`, `cp`, `mcp`, or `tar` on Lou. For example:

```
lou% shiftpc /nobackup/username/filename $HOME
```

If you initiate the transfer from Pleiades, you can use the commands `scp`, `bbftp`, `bbscp`, or `shiftpc` to transfer files between a PFE and Lou. Since the `bbscp` command uses almost the same syntax as the `scp` command, but performs faster than `scp`, we recommend using `bbscp` in cases where you do not require the data to be encrypted. For very large file transfers, we recommend the NAS-developed [Shift tool](#) (`shiftpc`).

File transfers from the compute nodes to Lou must first go through one of the PFEs.

When sending data to Lou, keep your largest individual file size under 1 terabyte (TB). Files larger than 1 TB will occupy all of the tape drives, preventing other file restores and backups.

Article ID: 181

Last updated: 16 Jun, 2021

Revision: 64

Post-Processing Data -> Pleiades Front-End (PFE) Usage Guidelines

<https://www.nas.nasa.gov/hecc/support/kb/entry/181/>